



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/768,133	01/23/2001	Ritsuko Nagao	SEL 236	3327

7590

02/25/2003

COOK, ALEX, MCFARRON, MANZO,  
CUMMINGS & MEHLER, LTD.  
Suite 2850  
200 West Adams St.  
Chicago, IL 60606

EXAMINER

PHAM, THANH V

ART UNIT

PAPER NUMBER

2823

DATE MAILED: 02/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application N .

09/768,133

Applicant(s)

NAGAO ET AL.

Examiner

Thanh V Pham

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/05/03 has been entered.

### ***Specification***

2. The corrected or substitute specification received on 01/07/03. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

3. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 8/12/02 has been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1-30 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art in combination with Chen U.S. Patent No. 5,453,406.

The applicant's admitted prior art for the TFT formation to form a display device having pixel electrodes and an insulative layer over the pixel electrodes is similar to the instant invention, having use of an organic material where a low dielectric property is considered (the instant specification, page 2, second paragraph) but lacking the second leveling layer over the insulative layer (instant invention's specification page 7).

The Chen reference discloses a method for producing a planar surface (col. 2, lines 64-67) wherein the thickness of a first leveling film 40 (2,000-3,000 Angstroms, col. 6, lines 1-10) formed above a wiring 34 is thinner than that of a second leveling film 42 (4,000-6,000 Angstroms, col. 6, line 53-54) formed on the first leveling film. Both first and second leveling films are formed by spin coating

and by the same material (col. 6, line 30). The method could be used to coat a display device (MPEP 2111.02).

Although Chen uses inorganic SOG material for the insulative layer, the applicant states "an organic material where a low dielectric property is considered" (the instant specification, page 2, second paragraph) and "a polyimide resin, an acrylic resin, a resin containing a siloxane structure, or an inorganic SOG material can be used" (instant specification's page 7, third paragraph) in such a manner that organic or inorganic materials are interchangeable.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of applicant's admitted prior art and the Chen's method, using organic materials for the two leveling films, to enable formation of the insulative layer of the applicant's admitted prior art process using the process of Chen and furthermore to achieve increased planarity over the formed TFT.

Choice of thickness of the leveling layers would depend on many other factors such as the gap between the protruded elements or the height of the protruded element.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the appropriate thickness such as the thickness in the ranges as claimed into the process of Chen as the thickness would be selected in accordance with the surface planarization art as taught by Chen.

**Conclusion**


7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh V Pham whose telephone number is 703-308-2543. The examiner can normally be reached on M-T (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 703-306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TvP  
February 13, 2003

  
George Fourson  
Primary Examiner  
2823